

BioSyn

(Methyl Palm)

Technical Data Sheet

BioSyn (Environmentally Friendly Solvent Replacement)

Heartland Energy Group, Ltd. is pleased to offer an environmentally friendly and direct replacement for d'Limonene. Heartland's BioSyn is a multi-use solvent that effectively addresses today's regulatory, safety and environmental issues facing solvent users today. BioSyn is a highly purified solvent that is derived from renewable and sustainable sources. BioSyn is derived from palm oil and subsequently converted into palm methyl ester solvent.

BioSyn is non-DOT regulated, non-fuming, biodegradable, non-toxic and OSHA and EPA compliant. BioSyn is manufactured with ingredients set forth by Cleangredients as Environmentally Safer Ingredients.

In addition to BioSyn's use in the oilfield, BioSyn can also be used as a key "green" replacement ingredient in the production of cleaners, degreasers, asphalt release agents, form release agents, blanket and roller cleanup formulas, ink removal, general adhesive removers, metal cutting compounds, animal fat degreasing, rust prevention and coating along with metal cutting.

TYPICAL PHYSICAL PROPERTIES:

Appearance and Color	*Pale Yellow to Dark
Odor	Mild Odor
Solubility in water	Insoluble
Initial Boiling Point	>392° F (>200° C)
Flashpoint	>300° F (>149° C)
Specific Gravity	.89±.04

* Color will vary based on variations in the palm crop.

FEATURES AND BENEFITS:

- A safer alternative to d'Limonene
- Aggressive Kauri-Butanol values
- Virtually NO VOC's and no citrus odor
- Flashpoint is greater than 300°F
- Listed on the Cleangredients database
- A multi-purpose solvent that dissolves paraffins and asphaltenes
- A great alternative to Xylene in acid treatment programs
- Derived from an environmentally sustainable and renewable process
- Extremely low evaporative emissions

DIRECTIONS FOR USE:

Recommended Dilution Rates: BioSyn can be used Neat. (Additional steps and additives are needed if a water wet formation is desired.) BioSyn can be blended with acid systems at 1-20% by volume provided a dispersant is used and precautions are taken to leave the formation water wet. All recommendations are based on the severity of the build-up and the reaction rate required for the project.

Blending ratios may vary based on specific applications and recommendations from your consultants at Heartland Energy Group, Ltd.

STORAGE AND HANDLING:

BioSyn has a storage life of better than one year. Keep container closed when not in use. As with all chemical products and materials, take care as to where you store them. Safety glasses are suggested for use when handling this product. No special gloves or protective equipment are required when handling this product.

PACKAGING:

BioSyn is packaged in 5 gallon to 275 gallon containers. Bulk quantities are available upon request.

Recommendations given in this data sheet are based on tests believed to be reliable. However, the use of the information is beyond the control of Heartland Energy Group, Ltd., and no guarantee, expressed or implied is made to the results obtained if not used in accordance with directions or established safe practice. The buyer must assume all responsibility, including injury or damage from the misuse of the product as such, or in combination with other materials. This bulletin is not to be taken as a license to operate under or recommendation to infringe any patent.